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ABSTRACT

The paper analyzes changes in conceptions of social interaction in infancy from a unidirectional process to a bidirectional one requiring dyadic analysis. Developments in the fields of ethology and comparative psychology are cited as are implications of early behaviorist research that pointed out the effects on the mother of the infant's behavior. The added dimension of interaction in bidirectional models is discussed. Additional input from personality theory regarding the importance of social contact on the development of the infant is noted. The notion of pre-adaptedness or preparedness for interaction is briefly cosidered, as are the effects of changes in the mother's behavior during the first year of her infant's life. (CL)

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THE EMERGENCE OF INTEREST IN SOCIAL INTERACTION IN INFANCY

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Metaphor, Models and Mother-Infant Interaction

Assumptions about the nature of the infant and the processes of human development have undergone marked transformations, resulting, in turn, in changes in theory and methodology over the last two decades. Succinctly summarised, the transformation represents a wider acceptance of the metaphor of the human infant as an active organism (Overton, 1976). This acceptance has in large part been the dynamic for much of the recent interest in social behaviour in infancy.

Metaphors exert a powerful influence upon the organization of research. The "general theoretical models" of science are, according to Reese and Overton (1970) "metaphorical" in nature. They represent the organising constructs which guide empirical research: the philosophical and ideological components of the scientist's Weltanschauung.

Two metaphors have exerted a particularly powerful influence upon the development of Western science, an influence which is particularly apparent in psychology. These can be labelled the "mechanistic" and the "organismic" models (Overton, 1976; Overton & Rees, 1973; Rees & Overton, 1970). Briefly stated: "In the mechanistic world view, the model for all phenomena is the machine; in the organismic world view, the model is the biological organism and its activities" (Rees & Overton, 1970, p. 117). Each model represents a fundamentally different way of viewing the phenomena of interest and the methods appropriate to their study.

Experimental psychology in the first half of the twentieth century seemed predominantly to be framed within the mechanistic world view.

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Its influence is still widely evident. The organismic model, however, is attracting an increasing set of adherents. Within studies of infancy, implicit adherence to the organismic model has led to an increasing acceptance of the view of the infant as an active organiser of experience: "one that gives form to its experience" (White, 1976, p. 100). As Schaffer (1971) puts it:

> Infants, we have learned, are not empty vessels to be filled with as much experience as we can cram into them; they are active partners in even the earliest social encounters and a much finer analysis is, therefore, required--an analysis that will take into consideration not only the stimulation offered by the mother but also the infant's own characteristics and what these, in turn, evoke in maternal responsiveness. (pp. 174-175)

Bidirectionality of Effects and the Need for Dyadic Analysis

Prior to the 1960s social influence was viewed by most theorists as a unidirectional process, from parent to child. While the essentially bidirectional nature of social encounters had been recognized by some theorists, the intellectual climate was such that the concept of mutual effects did not find a wide contemporary acceptance (Gerwirtz & Boyd, 1976). Its acceptance now, however, is widespread, as much so that adherents to both the mechanistic and organismic models recognize that the infant can affect the caregiving environment in important ways, and that there is a mutual flow of influence in parent-child interactions (Gewirtz & Boyd, 1976).

The recent acceptance of the bidirectionality of influences in infancy and childhood is the product of a multifaceted process of intellectual change. For example, the influential paper by Bell (1968) conveyed the basic message that "pieces of knowledge that had become fairly well established in the literature on socialization were not knowledge at all" (Maccoby, 1979, p. 5) and that correlational evidence did not provide a basis for imputing the direction of effect. Bell's argument fitted well with changes occurring in related areas.

One of these changes was the re-examination of Piagetian cognitive developmental theory by American developmental psychologists in the 1960s, following an earlier period of limited interest in the 1930s and then a long period of rejection (Bell & Harper, 1977; Cairns & Ornstein, 1979; Maccoby, 1979). In Piagetian theory, the infant is not simply a smaller version of the adult, but a person at a structurally distinct stage of human development, with the capacity to influence, and be influenced by, the surrounding environment.

At the same time, an increase occurred in the contributions to the conceptualisation of human development of findings and concepts from ethology and comparative psychology. Developmental psychologists became particularly receptive to arguments for the need to consider data on the powerful influence that the young of infra-human species have upon the behaviour of their parents. The appearance of the first volume of Bowlby's (1969) Attachment and Loss further focused attention upon the need to consider ethological evidence with regard to the salience of social influences, the importance of the social environment of early childhood, and the implicit bidirectionality of attachment and bonding.

Ironically, much of the evidence of the essentially active nature of the infant, and the powerful effects of infant behaviour upon the surrounding environment was accumulating within the compass of behaviourist research (White, 1976). For example, Rheingold (1966, 1969) and Moss (1967) both recognised that an infant's behaviour frequently acts to shape the mother's behaviour. As Rheingold (1966) put it "the infant, by his appearance and behavior, modifies the behavior of other social objects. He not only evokes responses from them but maintains and shapes their responses by reinforcing some and not others" (p. 12). Further, it became apparent that within a bidirectional interaction a behaviour can be both a response to a partner's immediate prior behaviour and, in turn, the stimulus for the partner's subsequent behaviour (Papousek & Papousek, 1977). All told, awareness of the need for reciprocal models of social behaviour is growing, even if in a somewhat inchoate manner, within the traditionally mechanistic schools of psychology.

With the recognition that the infant could influence the surrounding environment, the traditionally monadic, unidirectional models of infant social development were no longer appropriate. Models could be bidirectional, however, without being interactive. That is, each person could be seen as influencing the other, but these influences could still be studied separately. The need to work directly with interactions rather than with separate elements had also been noted earlier by Murray (1938) and Sears (1951). Sears (1951) noted that a readiness to think interactionally was slow to take root; "in spite of their long prepossession with social influences on the individual, psychologists think monadically. That is, they choose the behaviour of one person as their scientific subject matter. For them the universe is composed of individuals." (pp. 478-479).

Caldwell and Hersher (1964) echoed Sears' plea for conceptualizing the relationships between people at least in terms of dyadic units:

> In most studies of mother-infant interaction, a monadic theoretical model has been implicitly or explicitly employed. That is, the influence of the maternal personality (or attitudes, or family climate) upon the relatively unstructured personality of the infant has been of major concern. But such a model does not sufficiently weight the influence upon maternal behavior of the infant's emergent personality at any given time. What is needed, therefore, is a dyadic model which can hopefully deal with the needs, resources, and inadequacies of both members of the mother-infant interaction system. (p. 276)

A decade later, Lewis and Lee-Painter (1974) concluded that "only through interaction can we study, without distortion, human behavior" (p. 21). As Cairns (1977) concluded "the dyad has become the preferred unit of analysis, not the responses of individuals taken separately. Even when dyadic language is not employed, writers today are sensitive to mutual contingencies within relationships," (p. 2).

The Social Infant

At the same time as the dyad was emerging as "the preferred unit of analysis" (Cairns, 1977, p. 2), the importance of social contact upon the development of the infant was becoming of greater interest. The realisation that the meaning of much of human behaviour can only be understood in an interpersonal context was beginning to exert an influential force on psychology. Schaffer (1977) summarises the situation as follows:

> many functions traditionally treated in psychology as though they "belonged" to individuals and could thus be studied purely as intrapersonal events generally occur within an interpersonal context and . . . it is from this context that they derive their functional meaning. (p. 3)

Personality theory showed a similar rising stress on the determining effects of contexts and situations. This trend encountered the entrenched trait theories of personality with their traditional focus upon stable individual characteristics. However, the trend to emphasise situations as the exclusive determiners of behaviour has also attracted criticism (Bowers, 1973). Both extremes have been disavowed by Mischel (1973), who pointed to the need for considering person-situation interactions, with the person defined as actively constructing experience. The Scottish philosopher John MacMurray (1970) succinctly expressed the position "(the infant) can live only through other people and in dynamic relation with them. In virtue of this fact he is a person, for the personal is constituted by the relations of persons" (p. 51, emphasis added). In psychology Rheingold (1969) echoed MacMurray's thoughts in the following terms "the human infant is born into a social environment, he can remain alive only in a social environment; and from birth he takes his place in that environment" (p. 781). The social environment is now viewed as the forum for many of the fundamentally important developments of infancy.

The pre-adaptedness of the infant for social interaction has also emerged as a key concept (Newson, 1977; Schaffer, 1977, 1979; Trevarthen, 1977). Newson and Newson (1975) have asserted that the infant is "innately primed' to participate in complicated social rituals" (p. 440).

A less extreme position has been adopted by Maccoby (1978) who concluded that "From the moment of a child's birth, it is biologically mandated that a system of interaction will develop between the child and the adult responsible for its care" (p. 1).

The concept of pre-adaptedness draws attention to the evolutionary preparedness of human infants for the ecological niche into which they are born. There is certainly considerable evidence indicating that the infant sensory system is functional at birth and particularly attuned to the stimulation emitted by other human beings (Macfarlane, 1977; McGurk, 1974). Schaffer (1979) concludes that the infant is "equipped with structures that ensure a basic compatibility between himself and his caretakers" (p. 284). As a result, it is now widely held that the infant "has all the basic equipment he requires to begin to engage in face to face interpersonal communication--initially of a non-verbal kind--right from birth" (Newson, 1977, p. 49).

This is not to suggest, however, that human behaviour is pre-programmed. Even though such a position has been attractive to some theorists, a notion of complete pre-programming would fly in the face of the evidence of human adaptability (Barnett, 1973). More seriously, it does not take sufficient account of the fact that the sensory bases of the infant's participation in interaction undergo rapid developmental changes in infancy, changes that should be reflected in the developing interaction. As Schaffer (1971) has argued "The nature of the cognitive structure, in the sense of the total system of an individual's information processing strategies, differs with age and thus sets limits on the kinds of social behaviour that one can expect at various stages of development" (p. 247). The first year of post-natal life is marked by major changes in the infant nervous system; changes which set clear constraints on the infant's behaviour (Kagan, Kearsley & Zelazo, 1978). The infant's capacity to perceive and explore the world also changes dramatically in infancy producing a concomitant shift in interest from proximal to distal stimuli (Bell, 1974).

Also of importance for the present discussion are the changes in the mother's behaviour in the first year of her infant's life. Moss (1967) has suggested that the changes in the mother's behaviour in the first three months following the birth of her infant" . . . probably are largely a function of the maturation of various characteristics of the infant" (p. 25).

However, he recognised that changes are also wrought by "the increased confidence of the mother, her greater familiarity with her infant, and her developing attachment to him . . . " (p. 25).

The changing nature of the relationship between parent and infant has been clearly recognised by a number of authors (e.g., Cairns, 1977 and Maccoby, 1978). In Maccoby's words "A parent-child relationship cannot remain static. The forces of change within a child are too great for that" (p. 6, emphasis added).

There is still much to be learned about the courses of parent-child relationships. The changes in metaphors and models discussed in this paper have engendered new approaches to the study of the social behaviour of mothers and infants. These new approaches have, in turn, had a major impact upon both our understanding of social development, and the role of social processes in the development of the cognitive, communicative and affective capacities of children. Ultimately, such knowledge will further influence the design and implementation of developmental programs, not only in educational settings, but in the home, hospital or clinic and wherever young children with special developmental needs are to be found.

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